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PATENT APPLICATION TRANSMITTAL LETTER
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Docket No.
END9-2000-0075US1

TO THE ASSISTANT COMMISSIONER FOR PATENTS

JC841 U.S. PTO 09/660852 09/13/00

Transmitted herewith for filing under 35 U.S.C. 111 and 37 C.F.R. 1.53 is the patent application of:

G. Vahee et al

For: **PROJECT MANAGEMENT METHOD AND SYSTEM**

Enclosed are:

- ☒ Certificate of Mailing with Express Mail Mailing Label No. EL172581104US
- ☒ **Three (3)** sheets of drawings.
- ☐ A certified copy of a application.
- ☒ Declaration ☐ Signed. ☒ Unsigned.
- ☐ Power of Attorney
- ☒ Information Disclosure Statement
- ☐ Preliminary Amendment
- ☐ Other:

CLAIMS AS FILED

For	#Filed	#Allowed	#Extra		Rate	Fee
Total Claims	12	- 20 =	0	x	$18.00	$0.00
Indep. Claims	7	- 3 =	4	x	$78.00	$312.00
Multiple Dependent Claims (check if applicable) ☐						$0.00
					BASIC FEE	$690.00
					TOTAL FILING FEE	$1,002.00

- ☐ A check in the amount of to cover the filing fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge and credit Deposit Account No. **09-0457** as described below. A duplicate copy of this sheet is enclosed.
  - ☒ Charge the amount of **$1,002.00** as filing fee.
  - ☒ Credit any overpayment.
  - ☒ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.
  - ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Dated: 09/12/00

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cc:

APPLICATION

FOR

UNITED STATES LETTERS PATENT

APPLICANT(S) NAME: G. Vahee et al

TITLE: PROJECT MANAGEMENT METHOD AND SYSTEM

DOCKET NO. END9-2000-0075US1

INTERNATIONAL BUSINESS MACHINES CORPORATION

Certificate of Mailing Under 37 CFR 1.10

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DO NOT SCAN

PROJECT MANAGEMENT METHOD AND SYSTEM

TECHNICAL FIELD

The invention relates generally to management of projects in a company or other organization. More specifically, the invention is concerned with a method, system, tool, and computer program product for performing project management of one or more projects involving a plurality of process listings, work patterns, and links throughout the process listings.

BACKGROUND OF THE INVENTION

Efficient management of projects in a company or other organization is an increasing problem as the number and complexity of projects increases. An individual project may for example be directed to development of a product for sale by a company and involve a large number e.g. > 100 activities, herein called processes. It is therefore desirable that some system or method be used to monitor, regulate, control, and coordinate the various processes in a beneficial manner. The overall objective may be to accelerate a product development schedule or maximize efficiency of resource utilization, minimize development cost, resulting product cost or any other defined criteria.

Ladd, in US Patent 5,864,480 describes a system, method, and computer programs for assisting a user through the process of developing an electronic product and/or documentation. The system uses a computer with a monitor and memory. Stored in the memory is an electronic representation of a product to be developed and a process for the development of the product. The electronic representation of the process includes a process life-

cycle tree divided into phase realization subtrees. Each subtree has elements such as a document, a deliverable, a milestone, a decision point, or a schedule. The user interacts with the tree and subtrees using programs executed on a computer to control product development.

Song and Montoya-Weiss in their paper entitled "Critical Development Activities for Really New Versus Incremental Products," published in the Journal of Prod. Innov. Manag., vol. 15, no. 2, March 1998, p.124-135 describe product development activities for both new and incremental products. They describe a model linking new product profitability to the proficiency level of activities (processes). The model suggests when and on what processes, project management should concentrate resources to achieve higher levels of success.

A project may be directed to production of products or providing services rather than product development. Morgan et al. in US Patent 5,799,286 describe an automated activity-based method and system for managing a business organization. A user at a computer workstation enters activity information. The system automatically downloads and stores accounting information associated with the activities in a relational database along with the activity information. A database server maps expenses to the various activities and may generate reports to use in managing the project.

Ackroff et al in U.S. Patent 5,721,913 describe a system and method for managing the workflow of activities in a business organization. The system is computer-based and includes an information database of data records for independent activities.

Data objects are linked dependent upon the type of activity to be managed, and data records contain attribute information for the linked data objects. Activities are then controlled by controlling processing of the attribute information within each data record.

Various tools herein called technical methods have been developed for implementing a solution once the desired processes and relationships are known. Microsoft Project 2000 available from the Microsoft Corp. Redmond WA and PM Office available from Systemcorp®, Systemcorp is a registered trademark of Systemcorp, Inc. of Montreal Canada, are examples of such tools.

All of the aforementioned methods and tools have limitations for general use because the important steps of process definition and relationship definition are not addressed. It would therefore be a desirable goal to provide an improved project management method and system capable of handling these important parts of project management, and be capable of employment across a much broader range of project types. It is believed that such a method and system would constitute a significant advancement in the art.

OBJECTS AND SUMMARY OF THE INVENTION

It is therefore a principal object of the present invention to enhance the project management art by providing a process for managing projects with enhanced capabilities.

It is another object to provide a business process for transferring a business need into a strategy for providing a

solution to the need by building a project management tool and operating the tool to provide the solution.

It is a further object to provide a system and a tool for project management having enhanced capabilities.

It is yet another object to provide a computer program product with enhanced capability for managing a project.

These and other objects are attained in accordance with one embodiment of the invention wherein there is provided a process for managing a project, comprising the steps of, building a project management data model having entities and relationships described by text and graphical data, entering the project management data model in a relational database, building a project management tool having web pages from the text and graphical data, generating hyperlinks in the web pages of the tool based on the relationships in the relational database, and using the tool to manage the project.

In accordance with another embodiment of the invention there is provided a project management tool, comprising, a plurality of process listings, each process listing providing guidance about how to undertake an activity, a plurality of work patterns, each work pattern describing a response to a project management situation and having threads throughout the plurality of process listings, a plurality of work product documents linked to the plurality of process listings, the documents describing items used to manage a project, word processor templates for the work product documents describing plans, procedures, and records, and procedures for the process listings.

In accordance with another embodiment of the invention there is provided a computer program product for instructing a processor to provide a method of project management, the computer program product comprising, a computer readable medium, first program instruction means for building a project management data model having entities and relationships described by text and graphical data, second program instruction means for entering the project management data model in a relational database, third program instruction means for building a project management tool comprising web pages from the text and graphical data, fourth program instruction means for generating hyperlinks in the web pages of the tool based on the relationships in the relational database, and fifth program instruction means for using the tool to manage the project, and wherein all the program instruction means are recorded on the medium.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a flowchart of a process for managing a project in accordance with one embodiment of the invention;

FIG. 2 is a block diagram of a system for managing a project; and

FIG. 3 shows the link between work patterns and processes.

BEST MODE FOR CARRYING OUT THE INVENTION

For a better understanding of the present invention, together with other and further objects, advantages and capabilities thereof, reference is made to the following disclosure and the appended claims in connection with the above-described drawings.

In FIG.1 there is shown a flowchart of steps depicting a process for managing a project. Although shown for convenience of understanding as a sequence with arrows between steps, that is not to imply that a particular step can not be started before another is completed. In fact there is no sequential limitation between the steps in any embodiment of the invention other than as may be required by a corresponding appended claim below.

In step 11 a project management data model is built. The data model has entities and relationships (not shown) which may be described by text and graphical data. Text data may be in any form known for recording text including hardcopy, word processor data, or an audio recording of spoken text. Graphical data may include printed graphs, figures, and photographs, or it may also include digitized graphical data using any known format such as bit map (BMP), Joint Photographics Expert Group (JPEG), or any other method of representing graphical data. Graphical data may also include moving data such as animations or motion picture clips, sound clips, or other forms of data known in the art.

In step 12 the text and graphical data is entered into a relational database. Any type of relational database may be used such as DB2® (DB2 is a registered trademark of IBM Corporation). A specially developed relational database may also be used. The

relational database preferably includes a data description language (DDL) adapted to use in a project management tool.

One method of inserting the text and graphical data involves use of a parser (not shown). The parser knows the relationships of the data model. The parser reads the text, transforms it to a rich text format (RTF) and adds tags at the beginning and end of text corresponding to the entities which indicate the relationships. Any word processor capable of handling RTF or an equivalent format, such as LOTUS WORD PRO, Lotus Work Pro is a trademark of Lotus Development, Corp. Cambridge, MA, may be used. The text data may then be automatically stored in the right places, based on the tags, into a relational database using a tool such as Qualiware QLM22 available from QualiWare ApS, P.O. Box 60, Skovlytoften 9B, DK-2840 Holte, Denmark.

In step 13 a project management tool is built having web pages. The web pages are created from the text and graphical data. For example, a web page may contain text presenting a domain 27, what the domain is used for, and a list of sub-domains 28 it contains. The list of sub-domains is created using the relationships between a domain and the sub-domains in the relational database. For each sub-domain a web page presents the sub-domain and the list of processes 21 it contains. Text in a web page results from transforming the corresponding text stored in the relational database.

In step 14, links are added to the web pages based on the relationships in the data model of step 11.

The project is then managed in step 15 using the tool. Managing may include using the guidance and templates included in

the tool. It may also include inquiring the tool to determine what actions should be taken to read to an event. It may also include finding detailed explanations of how to periodically (e.g., monthly) report the status of a project.

One way of creating the web pages and adding the links is to use a generator tool (not shown). The generator tool first builds HTML web pages having empty boxes for the text and graphical data, and links. The generator then fills in the boxes with the appropriate text and graphical data from the relational database.

In FIG. 2 there is shown a block diagram of a system for project management in accordance with another embodiment of the present invention. A work pattern group 25 has one or more work patterns 22 for the project management methods of defining, planning, starting, monitoring, handling exceptions, handling deliveries, or closing of a project. Each work pattern 22 links processes in a series of useful scenarios such as will be described below in relation to FIG. 3. The work pattern is a set of steps 26 to achieve an activity or reach a goal. The work pattern helps a project manager respond to events and provides a timeline view through domains 27.

Each work pattern step 26 typically includes a 2 or 3 line description of the step referencing one or more process listings 21. Each process listing provides guidance to a project manager in the form of typically 1, 2, or 3 pages of text describing what the project manager should be considering during that step. Some processes are proceduralized by being described by a written procedure 29.

A domain 27 describes project management processes in a series of topic areas such as work plan management, technical environment management, tracking and control, supplier management, sponsor agreement management, risk management, quality management, project definition, human resource management, event management, deliverables management, communications management, or change management. A domain may have sub-domains 28 which then reference the process listings 21.

The system for project management of FIG. 2 also includes work product documents 23 which describe the items such as process inputs and outputs, procedures, plans, reports, forms and logs, a project manager uses to manage a project. Work product documents may include the examples shown below in Table 1.

Action log	Project charter
Agreement	Project definition
Change request	Project management schedule
Communications management plan	Project quality plan
Deliverable definition	Risk Management Plan
Human resource plan	Staff Schedule
Issue document	Sub-project/team status report
Milestone list	Work breakdown structure (WBS)
Operational schedule	
Organizational breakdown structure (OBS)	
Product breakdown structure (PBS)	

TABLE 1

A work product document 23 may include a word processor template 24 which can be filled in for the particular project being managed. The word processor templates 24 may then be stored in a hardcopy or on-line in softcopy form of project

control book (not shown). Each work product document references and is referenced by one or more process listings 21.

In FIG. 3 there is shown a diagram 30 describing how work patterns 22 and process listings 21 of FIG. 2 are linked. A work pattern 35 includes one or more series of steps 36. Each step 36 references a process listing within a domain such as 31, 32, 33, 34. The work pattern provides the linkage between and may have threads throughout the process listings to achieve the desired activity or goal. A project manager may therefore use the system of FIG. 2 by entering though either the domain 27 or work patterns group elements described above.

While there have been shown and described what are at present considered the preferred embodiments of the invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the scope of the invention as defined by the appended claims.

What is claimed is:

1. A process for managing a project, comprising the steps of:

building a project management data model having entities and relationships described by text and graphical data;
entering said project management data model in a relational database;

building a project management tool having web pages from said text and graphical data;

generating hyperlinks in said web pages of said tool based on said relationships in said relational database; and
using said tool to manage said project.

2. The process of claim 1, wherein said text includes guidance based on experience.

3. The process of claim 1, wherein said text has been entered in a word processor.

4. The process of claim 1, wherein said graphical data is entered in an image processing application program.

5. The process of claim 1, wherein said project management data model comprises a project definition process, a change management process, a risk management tool, and an issue management tool.

6. The process of claim 1, further comprising the step of parsing said text data by adding tags identifying the nature, beginning, and end of said entities described by text data and storing said

parsed text data in said relational database.

7. A business process for transforming a business need into a strategy for providing a solution which meets said need, comprising the steps of:

defining said business need;

building in response to said business need, a project management data model having entities and relationships described by text and graphical data;

entering said project management data model into a relational database;

building a project management tool comprising web pages from said text and graphical data;

generating hyperlinks in said web pages of said tool based on said relationships in said relational database; and

operating said tool to provide a solution which meets said need.

8. A system for project management, comprising:

a project management data model having entities and relationships described by text and graphical data;

a relational database containing said model;

a project management tool having web pages generated from said text and graphical data;

hyperlinks in said web pages of said tool based on said relationships in said relational database; and

computer means for operating said tool and said data model to manage a project.

9. A project management tool, comprising:

a plurality of process listings, each said process listing providing guidance about how to undertake an activity;

a plurality of work patterns, each said work pattern describing a response to a project management situation and having threads throughout said plurality of process listings;

a plurality of work product documents linked to said plurality of process listings, said documents describing items used to manage a project;

word processor templates for said work product documents describing plans, procedures, and records; and

procedures for said process listings.

10. A system for managing projects within an enterprise, comprising:

a project management data model having entities and relationships described by text and graphical data;

a relational database containing said model;

a project management tool having web pages generated from said text and graphical data;

hyperlinks in said web pages of said tool based on said relationships in said relational database; and

computer means for operating said tool and said data model to manage said projects within said enterprise.

11. A project management system implemented on a computer system, said project management system comprising:

means for building a project management data model having entities and relationships described by text and graphical data;

means for entering said project management data model in a relational database;

means for building a project management tool comprising web pages from said text and graphical data;means for generating hyperlinks in said web pages of said tool based on said relationships in said relational database; and

means for using said tool to manage said project.

12. A computer program product for instructing a processor to provide a method of project management, said computer program product comprising:

a computer readable medium;

first program instruction means for building a project management data model having entities and relationships described by text and graphical data;

second program instruction means for entering said project management data model in a relational database;

third program instruction means for building a project management tool comprising web pages from said text and graphical data;

fourth program instruction means for generating hyperlinks in said web pages of said tool based on said relationships in said relational database; and

fifth program instruction means for using said tool to manage said project; and wherein

all said program instruction means are recorded on said medium.

ABSTRACT

PROJECT MANAGEMENT METHOD AND SYSTEM

A project management method and system provides process definition and relationship definition. Work patterns link steps with process listings in a series of useful scenarios for project management. Work product documents provide guidance to a project manager. A system may be entered either through a work pattern group or a domain of topic areas.

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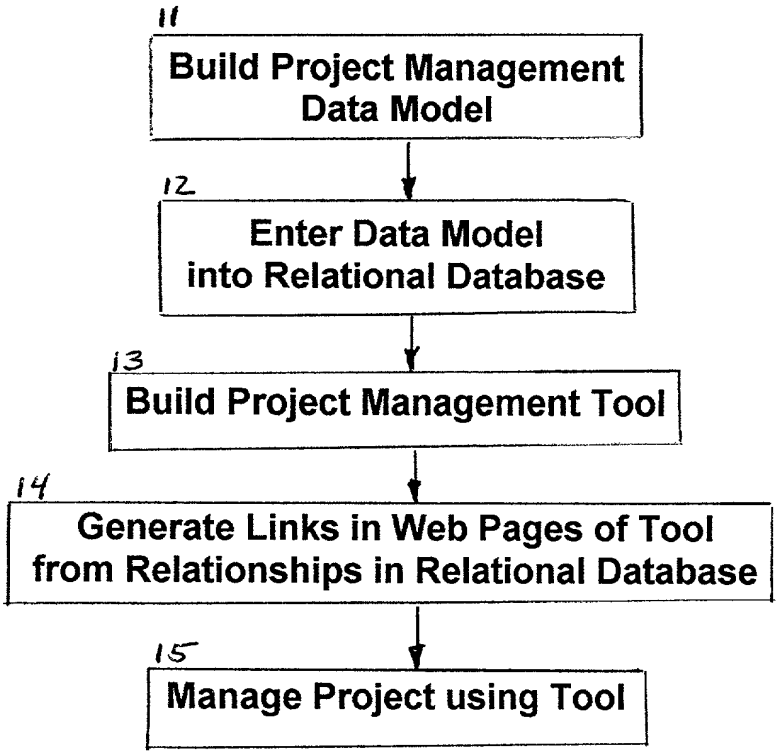

FIG. 1

09/542,459

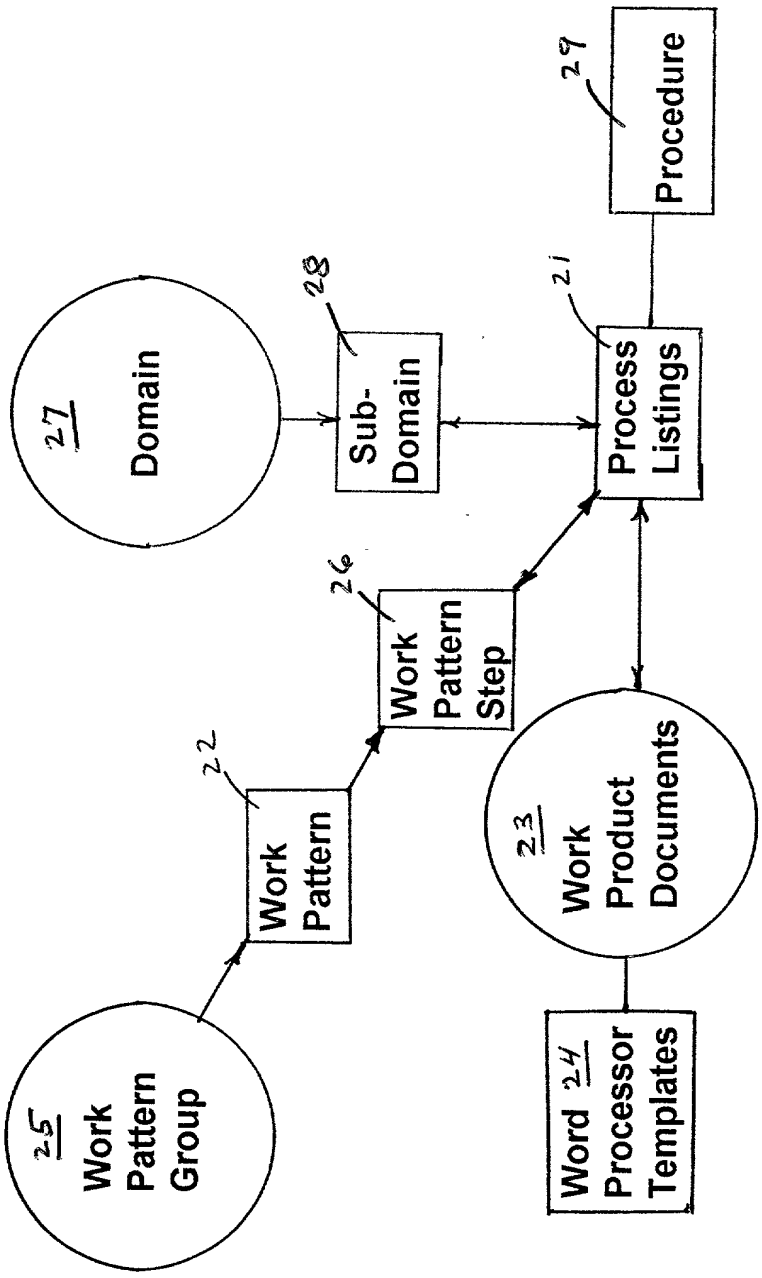
25
Work Pattern Group
22
Work Pattern
26
Work Pattern Step
27
Domain
28
Sub-Domain
21
Process Listings
29
Procedure
23
Work Product Documents
Word 24
Processor Templates

FIG. 2

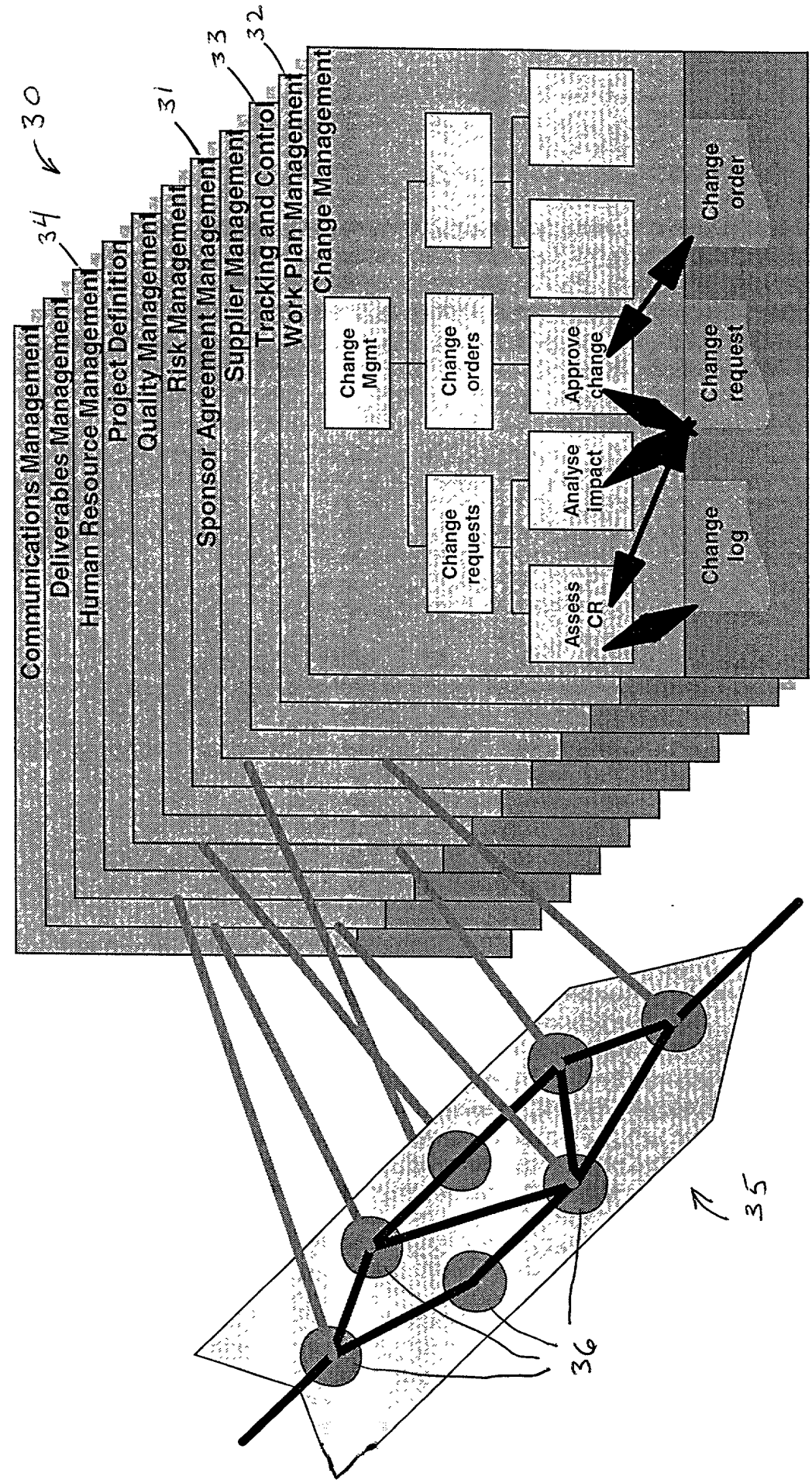
30
34
31
33
32
Communications Management
Deliverables Management
Human Resource Management
Project Definition
Quality Management
Risk Management
Sponsor Agreement Management
Supplier Management
Tracking and Control
Work Plan Management
Change Management
Change Mgmt
Change orders
Change requests
Assess CR
Analyse impact
Approve change
Change log
Change request
Change order
35
36

FIG. 3

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Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

PROJECT MANAGEMENT METHOD AND SYSTEM

the specification of which

(check one)

☒ is attached hereto.

☐ was filed on _____ as United States Application No. or PCT International Application Number _____

and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)			Priority Not Claimed
NONE			☐
(Number)	(Country)	(Day/Month/Year Filed)	
			☐
(Number)	(Country)	(Day/Month/Year Filed)	
			☐
(Number)	(Country)	(Day/Month/Year Filed)	

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

NONE	
(Application Serial No.)	(Filing Date)
(Application Serial No.)	(Filing Date)
(Application Serial No.)	(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
NONE		
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

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Edward A. Pennington **Reg. No: 32,588**
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Citizenship
Post Office Address

Full name of fifth inventor, if any
Fifth inventor's signature Date
Residence
Citizenship
Post Office Address

Full name of sixth inventor, if any
Sixth inventor's signature Date
Residence
Citizenship
Post Office Address